

VEXpro BAG Motor - Spring Modification Instructions

Applies to Production Batches: 2491BL, 2462BL, and 2493BL

NOTE:

VEX Robotics has identified an issue which affects certain production batches of VEXpro BAG motors (217-3351). The affected batches are: 2491BL, 2462BL, and 2493BL. This issue results in lower than desired brush spring force. Users can repair this issue by adding bends to the brush springs, which will increase the applied force. This guide walks users through the modification of the two brush springs inside the motor.

Spring modification guide applies only to motors purchased before the 2014 FRC season. Motors with a sticker saying "Dyno tested [date]" have already been modified and tested to meet expected performance levels.

Step 1 - Remove (2) screws from the end cap.



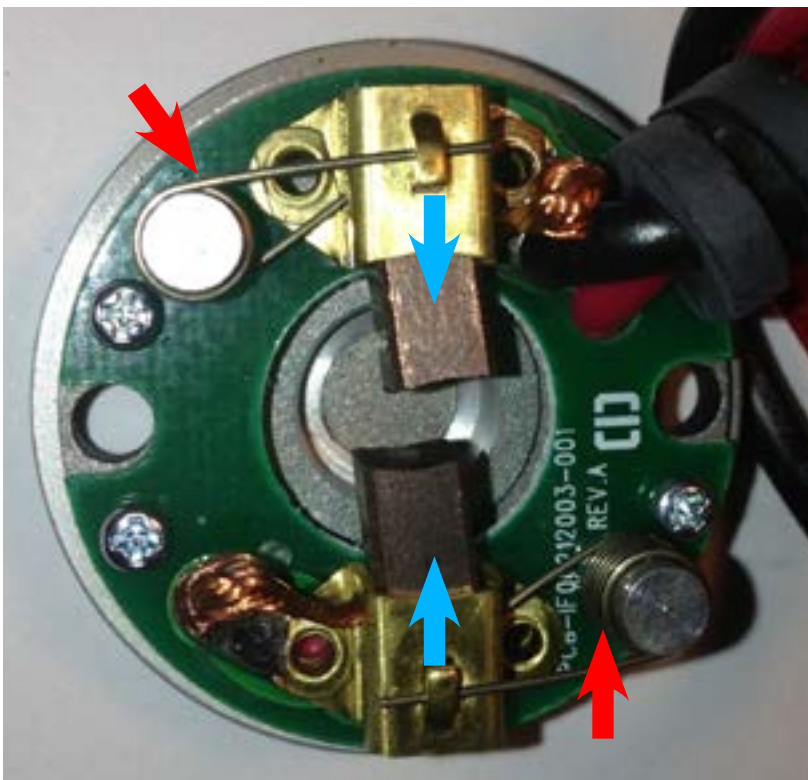
Step 2 - Remove the end cap.



Step 3 - Notice the (4) loose washers may fall out. Locate these and retain.



Step 4 - Locate and remove the brush springs (red arrows). Remove by pushing the end in the direction of the blue arrow.



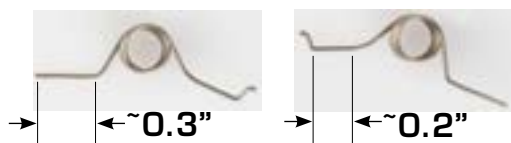
Step 5 -Springs after removal. Both springs are the same.



Step 6 - Find needle nose pliers

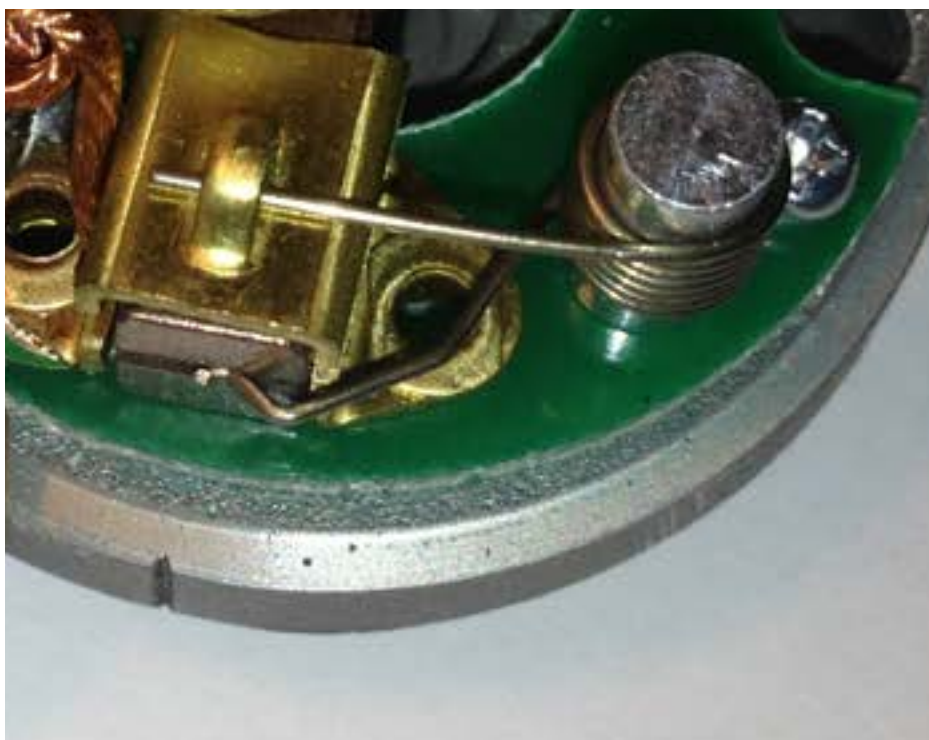


Step 7 - Bend both ends of the spring as shown. The two drawings below are to scale. Use the lines to bend the springs to match the length and angle.



Actual Size

Step 8 - Reinstall both springs. Notice the non-straight end is in the brush's groove.



Step 9 - Re-install the four washers in the order shown into the bearing hole between the brushes. The black wave spring will be on top.



Step 10 - Washers installed.



Step 11 - Remove the rotor from the housing and front cap. Be sure to locate and retain the white washer.



Step 12 - Install the rotor in the bottom cap between the brushes.



Step 12 - Install the motor housing over the rotor. You will have to hold the rotor with your thumb to keep the magnets from moving the rotor out of the end cap. If the rotor comes out of the end cap, go back to step 9 and check that all washers are in place before trying again.



Step 13 - Make sure the white washer from Step 11 is in place.



Step 14 - Install the front cap and align the grooves in the front and end caps.



Step 15 - Reinstall the two screws. Notice the screws go into the wider spaced holes.

